

## Secondary and Cumulative Effects

NEPA was created "recognizing the profound impact of man's activity on the interrelationships of all components of the natural environment." As such, there is a strong awareness in NEPA analysis of identifying and reducing potential effects of actions on the environment.

The CEQ regulations (40 CFR 1508.8) define several different types of effects that should be evaluated under NEPA:

"Effects" include:

- (a) Direct effects, which are caused by the action and occur at the same time and place.
- (b) Indirect effects, which are caused by the action and are later in time or farther removed in distance, but are still reasonably foreseeable. Indirect effects may include growth inducing effects and other effects related to induced changes in the pattern of land use, population density or growth rate, and related effects on air and water and other natural systems, including ecosystems.

Effects and impacts as used in these regulations are synonymous. Effects includes ecological (such as the effects on natural resources and on the components, structures, and functioning of affected ecosystems), aesthetic, historic, cultural, economic, social, or health, whether direct, indirect, or cumulative. Effects may also include those resulting from actions which may have both beneficial and detrimental effects, even if on balance the agency believes that the effect will be beneficial.

The regulations (40 CFR 1508.7) also define "cumulative impact" as:

the impact on the environment which results from the incremental impact of the action when added to other past, present, and reasonably foreseeable future actions regardless of what agency (Federal or non-Federal) or person undertakes such other actions. Cumulative impacts can result from individually minor but collectively significant actions taking place over a period of time.

Assessment of the effects of a transportation project should include consideration of direct and indirect effects, as well as an evaluation of what cumulative effects might occur because of other actions, including those outside the jurisdiction of the transportation agency.

In January of 1997, the Council on Environmental Quality published a handbook entitled Considering Cumulative Effects Under the National Environmental Policy Act. The handbook "introduces the NEPA practitioner and other interested parties to the complex issue of cumulative effects, outlines general principles, presents useful steps, and provides information on methods of cumulative effects analysis and data sources." The handbook presents a great deal of useful information, but does not establish new requirements for such analyses. It is not and should not be viewed as formal CEQ guidance on cumulative effects analysis, nor are its recommendations intended to be legally binding. You can access the handbook in its entirety through the CEQ NEPAnet.

Particularly useful is a general approach, described in the CEQ handbook, of eleven steps for analyzing cumulative effects.

An FHWA memo dated August 20, 1992 provides agency guidance on methods to deal with evaluation of Secondary and Cumulative Impacts. It will be replaced or supplemented shortly by more current offerings.